

Notic of Allowability

Application N .

10/719,538

Examiner

Deepak Rao

Applicant(s)

WU ET AL.

Art Unit

1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on October 20, 2004.
2. ☒ The allowed claim(s) is/are 1-4 and 6-8.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

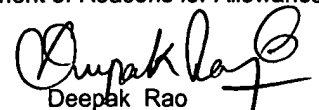
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


Deepak Rao
Primary Examiner
Art Unit: 1624

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Aldo Algieri on January 6, 2005.

The application has been amended as follows:

In claim 3, delete lines 46-49 and in place insert:

- (S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2-fluoro-phenyl)-acrylamide;
(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-phenyl-acrylamide;
(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2,4-difluoro-phenyl)-acrylamide; and
(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2,6-difluoro-phenyl)-acrylamide; --

In claim 4, line 1, delete "for the treatment of disorders".

In claim 4, line 2, delete "responsive to opening of KCNQ potassium channels".

In claim 6, line 4, following 'anxiety,' insert -- and --.

In claim 6, line 4, delete "and neurodegenerative disorders".

Note: Copy of claims 3, 4 and 6 as amended are enclosed in the Appendix.

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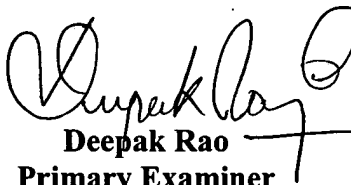
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deepak Rao whose telephone number is (571) 272-0672. The examiner can normally be reached on Tuesday-Friday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Mukund Shah, can be reached on (571) 262-0674. If you are unable to reach Dr. Shah within a 24 hour period, please contact James O. Wilson, Acting-SPE of 1624 at (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deepak Rao
Primary Examiner
Art Unit 1624

January 6, 2005

APPENDIX

3. (Currently Amended) The compound of claim 1 selected from the group consisting of:

- (S)-3-(2-fluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3-fluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(4-fluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,3-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,5-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,6-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3,4-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3,5-difluoro-phenyl)-N-{1-[3-(pyridin-2-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2-fluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3-fluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(4-fluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,3-difluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,5-difluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3,4-difluoro-phenyl)-N-{1-[3-(pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(4-fluoro-phenyl)-N-{1-[3-(6-methyl-pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(6-methyl-pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,5-difluoro-phenyl)-N-{1-[3-(6-methyl-pyridin-3-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-N-{1-[3-(6-methyl-pyridin-3-yloxy)-phenyl]-ethyl}-3-(2,4,5-trifluoro-phenyl)-acrylamide;
- (S)-3-(2-fluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(3-fluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(4-fluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,3-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
- (S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;

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(S)-3-(2,6-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,5-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(3,4-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(3,5-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-propionamide;
(S)-3-(3,4-difluoro-phenyl)-N-{1-[3-(pyridin-4-yloxy)-phenyl]-ethyl}-propionamide;
(S)-3-(2-fluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(3-fluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(4-fluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,3-difluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,6-difluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(3,5-difluoro-phenyl)-N-{1-[3-(pyrazin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,3-difluoro-phenyl)-N-{1-[3-(pyrimidin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,6-difluoro-phenyl)-N-{1-[3-(pyrimidin-2-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2-fluoro-phenyl)-N-{1-[3-(pyrimidin-5-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(3-fluoro-phenyl)-N-{1-[3-(pyrimidin-5-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(4-fluoro-phenyl)-N-{1-[3-(pyrimidin-5-yloxy)-phenyl]-ethyl}-acrylamide;
(S)-3-(2,4-difluoro-phenyl)-N-{1-[3-(pyrimidin-5-yloxy)-phenyl]-ethyl}-acrylamide;
~~(S)-N-[1-(3-benzylamino-phenyl)-ethyl]-3-(2-fluoro-phenyl)-acrylamide;—~~
~~(S)-N-[1-(3-benzylamino-phenyl)-ethyl]-3-phenyl-acrylamide;—~~
~~(S)-N-[1-(3-benzylamino-phenyl)-ethyl]-3-(2,4-difluoro-phenyl)-acrylamide; and—~~
~~(S)-N-[1-(3-benzylamino-phenyl)-ethyl]-3-(2,6-difluoro-phenyl)-acrylamide;—~~

(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2-fluoro-phenyl)-acrylamide;

(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-phenyl-acrylamide;

(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2,4-difluoro-phenyl)-acrylamide; and

(S)-N-[1-(3-pyridin-3-ylmethylamino-phenyl)-ethyl]-3-(2,6-difluoro-phenyl)-acrylamide;

or a pharmaceutically acceptable salt thereof.

4. (Currently Amended) A pharmaceutical composition ~~for the treatment of disorders responsive to opening of KCNQ potassium channels~~ comprising a therapeutically effective amount of the compound of claim 1 in association with a pharmaceutically acceptable carrier, adjuvant or diluent.

6. (Currently Amended) A method for the treatment of disorders responsive to opening of the KCNQ potassium channels in a mammal in need thereof, wherein said disorders are acute and chronic pain, migraine, neuropathic pain, bipolar disorders, convulsions, mania, epilepsy, anxiety, and depression ~~and neurodegenerative disorders~~, which comprises administering to said mammal a therapeutically effective amount of the compound of claim 1.